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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/525,854	02/24/2005	Yoshihiro Nakami	MIPFP132	9589

25920 7590 09/21/2007
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EXAMINER

HSU, AMY R

ART UNIT	PAPER NUMBER
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2622

MAIL DATE	DELIVERY MODE
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09/21/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/525,854

Applicant(s)

NAKAMI, YOSHIHIRO

Examiner

Amy Hsu

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 10/16/2006, and 8/1/2006.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs, which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.

When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and *Warmerdam*, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See *Lowry*, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

Claim 19 is rejected under 35 U. S. C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim 19 defines a computer program for causing a computer to execute processing of image data. However, the claim does not define a computer readable medium or memory and is thus non-statutory for that reason (i.e., "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized" - Guidelines Annex)

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 5-7, 11-13, 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herman (US 6903782) in view of Matsushima (US 7251056).

Regarding Claim 1, Herman teaches an output device (*monitor, Fig. 3 reference number 385*) for outputting an image using image data generated by an image generating device (*Col 2 Lines 61-62 teaches the device uses incoming image data which are video signals and Line 59 teaches the apparatus enhances a video image, which inherently is generated by an image generating device*), the output device comprising: an image quality adjuster that calculates a hue of each pixel in the subject area (*Col 8 Lines 4-6 teaches that an image processor calculates information for all pixels and Col 7 Line 28 teaches the calculated information is hue and saturation values*), and if a proportion of pixels having hue of a predetermined color range is greater than a first predetermined threshold value (*Col 8 Lines 4-8, the pixels compare favorably, or up to a certain level, with predefined values*), executes an image quality adjustment process appropriate for an image containing a subject identified by the

predetermined color range (*Col 8 Lines 7-23*); and an image output unit that outputs an image according to the quality-adjusted image data (*Col 8 Lines 34-37*).

Herman does not teach the input image data having information that is associated with the image data and that includes at least subject area information indicating a subject area in the image.

Matsushima teaches in Fig. 2 an image processing device, which takes input image data and extracts the subject area (*Fig. 2 reference number 201*), with this information associated with the image data before it is processed by reference number 211. It is well known in the art to extract the subject area such as a person versus the background.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teaching of Herman with the well known teaching of Matsushima to identify the subject area and associate this information with the image data before putting it through image processing taught by Herman because then the image processing can be concentrated and applied to the correct area to optimize the quality of the adjustments.

Regarding Claim 5, Herman in view of Matsushima teach an output device according to claim 1, wherein the image quality adjustment is executed exclusively on a target processing area which is a portion of the image and which contains pixels present within the subject area and having color of the predetermined color range. Herman teaches that groups of pixels that compare favorably with predefined values

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are identified as belonging to a common segment, and is a target area where appropriate processing is applied (*Col 8 Lines 10-14*).

Regarding Claim 6, Herman in view of Matsushima teaches an output device according to claim 5, wherein the target processing area includes pixels of a first type present within the subject area and having color of the predetermined color range, and pixels of a second type present outside the subject area, but contiguous with the pixels of the first type and having color of the predetermined color range. Herman teaches that an image is segmented into a plurality of segments (*Col 2 Lines 62-65*) and each segment is analyzed according to the procedure of Fig. 4. Therefore a target processing area in one segment can contain a human face which is detected by a group of pixels that compare favorably with a predefined value (*Col 8 Lines 10-12*) for skin color, and pixels of a second type can be present outside this subject area because the segment next to the first mentioned segment can contain another human face contiguous with the face of the first segment and having color of the same skin range. However since Herman teaches that the image is segmented, it is outside the first mentioned target processing area, or individual segment.

Regarding Claim 7, Herman in view of Matsushima teaches an image data processing device for processing image data (*Fig. 2 reference number 220*) with the limitations of Claim 1 and is therefore similarly rejected.

Regarding Claims 11-12, Herman in view of Matsushima teach an image data processing device for processing image data (*Fig. 2 reference number 220*) with the limitations of Claims 5-6 and are therefore similarly rejected.

Claim 13 is a method claim corresponding to Claim 7 and is therefore similarly rejected.

Claims 17-18 are method claims corresponding to Claims 11-12 and are therefore similarly rejected.

Claims 19 and 20 are directed to a computer program and computer readable medium with a computer program recorded which enables the functions and limitations of Claim 1. Herman teaches in Col 8 Line 4 an image processor, which inherently is a computer run by a computer program, and both claims are therefore rejected similarly as Claim 1.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-4, 8-10, and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herman et al. (US 6903782) in view of Matsushima (US 7251056), further in view of Hoshuyama et al. (US 6906744).

Regarding Claim 2, Herman in view of Matsushima teach an output device according to claim 1, wherein the predetermined color range is a skin color range (*Col 7 Line 63*), but do not teach the image quality adjustment process is a process appropriate for a portrait image. Hoshuyama teaches a similar apparatus which detects skin color and also teaches when the camera is set to a portrait photographing mode, the apparatus will detect skin color (*Col 14 Line 66 through Col 15 Line 6*).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teaching of Herman in view of Matsushima with that of Hoshuyama because a user will select portrait mode when he is taking a picture of a person's face, and in this situation the camera should be set to detect skin color in order to optimize the appearance of a person's face.

Regarding Claim 3, Herman in view of Matsushima further in view of Hoshuyama teach an output device according to claim 2. Herman teaches that a partial area that belongs to a certain segment has corresponding enhancement applied (*Col 8 Lines 21-24*) and gives an example that if a certain area contains a high proportion of green pixels, it could be a palm leaf and color enhancement that enhances edges of a palm leaf can be applied (*Col 8 Lines 27-34*). Herman teaches that the concept taught by

this example can be applied to human skin with different parameter values and enhancements (*Col 7 Lines 61-65*). Herman fails to teach a specifically a portrait. This is addressed with Claim 2.

Regarding Claim 4, Herman in view of Matsushima further in view of Hoshuyama teach an output device according to claim 2 or 3, wherein when the image quality adjustment process appropriate for a portrait image is not executed, and if a proportion of pixels having hue in a green range is greater than a second predetermined threshold value or if a proportion of pixels having hue in a sky blue range is greater than a third predetermined threshold value, the image quality adjuster executes an image quality adjustment process appropriate for a landscape image. Herman teaches that other regions such as sky and green plant segments can be identified and enhanced by different probability functions, which will define predetermined threshold values, and also different parameter values will be used for enhancement (*Col. 7 Lines 56-65*).

Regarding Claims 8-10, Herman in view of Matsushima further in view of Hoshuyama teach an image data processing device for processing image data (*Fig. 2 reference number 220*) with the limitations of Claims 2-4 and are therefore similarly rejected.

Claims 14-16 are method claims corresponding to Claims 8-10 and are therefore similarly rejected.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure including Takemoto (US 7034959), Takemoto (US 7251054), Lee et al. (US 6639998), Nakamura (US 5557688), Hasegawa (US 6704448), and Aihara (US 2002/0037101).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amy Hsu whose telephone number is 571-270-3012. The examiner can normally be reached on M-F 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on 571-272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Amy Hsu

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TUAN HO
PRIMARY EXAMINER